

**WHAT IS CLAIMED:**

1. A method for dynamically configuring a tunnel comprising:  
initiating, by a first peer, a negotiation with a second peer;  
sending, by the second peer, information to the first peer;  
extracting, by the first peer, a security configuration from the information sent by the second peer; and  
establishing, using the security configuration, a tunnel between the first peer and the second peer.
  
2. The method of claim 1, wherein the negotiation utilizes the configuration mode exchange extension of the IPSec protocol.
  
3. The method of claim 1, wherein the establishing a tunnel includes conducting a phase2 negotiation in the IPSec protocol.
  
4. The method of claim 1, further comprising initiating, by the first peer, a preliminary negotiation with the second peer.
  
5. The method of claim 4, wherein the initiating a preliminary negotiation includes conducting a phase1 negotiation in the IPSec protocol.
  
6. A method for dynamically configuring a tunnel comprising:  
initiating, by a first peer, a negotiation with a second peer;

extracting, by the first peer, a security configuration from information sent by the second peer; and

establishing, using the security configuration, a tunnel between the first peer and the second peer.

7. The method of claim 6, wherein the tunnel is an IPSec tunnel.

8. The method of claim 6, wherein the negotiation utilizes the configuration mode exchange extension of the IPSec protocol.

9. The method of claim 6, wherein the initiating comprises requesting, by the first peer, that the second peer send information, the information including policy information to define a subsequent negotiation between the first peer and the second peer.

10. The method of claim 9, wherein the policy information defines one or more security associations.

11. The method of claim 10, wherein the information sent by the second peer comprises sets of attributes, the attributes including security parameters and network addresses.

12. The method of claim 6, wherein the establishing a tunnel comprises negotiating, by the first peer with the second peer, to generate a secure key.

13. The method of claim 12, wherein the negotiating to generate a secure key includes conducting a phase2 negotiation in the IPSec protocol.
14. The method of claim 6, wherein the establishing a tunnel utilizes the quick mode exchange of the IPSec protocol.
15. The method of claim 6, wherein the IP address of the second peer is accessible to the first peer.
16. The method of claim 15, wherein a shared secret is stored on the first peer before the negotiation.
17. The method of claim 6, further comprising initiating, by the first peer, a preliminary negotiation with the second peer, the initiating comprising offering, by the first peer to the second peer, at least one security proposal supported by the first peer.
18. The method of claim 17, wherein the first peer orders offered security proposals in a transmission packet such that a more secure security proposal is offered before a less secure proposal.
19. The method of claim 17, wherein the preliminary negotiation utilizes the base mode exchange extension of the IPSec protocol.
20. The method of claim 17, wherein the initiating a preliminary negotiation further comprises sending, by the first peer to the second peer, the identity of the first peer.

21. The method of claim 17, wherein the initiating a preliminary negotiation includes conducting a phase1 negotiation in the IPSec protocol.

22. The method of claim 17, wherein the preliminary negotiation utilizes one of main mode and aggressive mode of the IPSec protocol.

23. A method for dynamically configuring a tunnel comprising:  
sending, by a second peer, information to a first peer that initiated a negotiation with the second peer, the information including a security configuration intended to be extracted by the first peer; and  
establishing, using the security configuration, a tunnel between the first peer and the second peer.

24. The method of claim 23, wherein the information includes policy information defining one or more security associations.

25. A system for dynamically configuring a tunnel comprising:  
a first peer; and  
a second peer configured to communicate with the first peer over a network connection,  
wherein the first peer is configured to initiate a negotiation with the second peer,  
the second peer is configured to send information to the first peer,

the first peer is configured to extract a security configuration from the information sent by the second peer, and

the first peer and the second peer are configured to establish a tunnel therebetween using the security configuration.

26. The system of claim 25, wherein the tunnel is an IPSec tunnel.

27. A computer-readable medium encoded with a plurality of processor-executable instruction sequences for:

initiating, by a first peer, a negotiation with a second peer;

extracting, by the first peer, a security configuration from information sent by the second peer; and

establishing, using the security configuration, a tunnel between the first peer and the second peer.

28. The computer-readable medium of claim 27, wherein the negotiation comprises a request/reply negotiation, wherein the first peer requests that the second peer send the information, and the second peer replies to the request by sending the information to the first peer.

29. A computer-readable medium encoded with a plurality of processor-executable instruction sequences for:

sending, by a second peer, information to a first peer that initiated a negotiation with the second peer, the information including a security configuration intended to be extracted by the first peer; and

establishing, using the security configuration, a tunnel between the first peer and the second peer.

30. The computer-readable medium of claim 29, wherein the information includes sets of attributes, the attributes including security parameters and network addresses.

PCT/US2014/033336